Herpes Simplex, Genital and Neonatal

1. DISEASE REPORTING

A. Purposes of Reporting and Surveillance

To assess trends in epidemic patterns, understand the impact of the burden of disease on populations, the health care infrastructure, and to better target population-level disease prevention efforts.

B. Legal Reporting Requirements

1. Health care providers: initial genital and all neonatal infections are notifiable to local health jurisdiction within 3 work days (WAC 246-101-101)
2. Hospitals: no requirements for reporting
3. Laboratories: no requirements for reporting
4. Local health jurisdictions: notify the Washington State Department of Health (DOH), STD Services Section within 7 days of case investigation completion; summary information required within 21 days for all reported cases

C. Local Health Jurisdiction Investigation Responsibilities

1. Use the STD Morbidity Report Form for herpes simplex available at your Local Health Jurisdiction. (http://www.doh.wa.gov/LHJMap/LHJMap.htm)

2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Herpes simplex virus (HSV) is in the virus family *herpes viridae*, subfamily *Alphaherpesvirinae*. HSV 1 and 2 can be differentiated immunologically and differ with respect to their growth patterns in cell culture, embryonated eggs and experimental animals.

B. Description of Illness

Herpes simplex is commonly asymptomatic. Infection is characterized by a localized primary lesion, latency and tendency to localized recurrence. The primary lesions in women are on the cervix, and vulva. In men, lesions appear on the glans penis or prepuce, and in the anus and/or rectum of those engaging in anal sex. Lesions may be present in other genital or perineal sites as well as the mouth, in men and women depending on sexual practices.

The disease is severe for infants, can result in fetal malformation, severe mental retardation, brain damage or infant mortality. For pregnant women who are infected, spontaneous abortion or premature delivery could occur. The risk of neonatal infection is a primary reason for caesarian section delivery among women with genital herpes infections.

C. Herpes in Washington State

During recent years, DOH has received approximately 2,000 reports of initial genital HSV infection per year, for an average rate of 33 per 100,000 population. During 2007, there were 1,925 cases of initial genital herpes reported to DOH.

Neonatal Herpes:

In Washington State, population-based estimates of the incidence of neonatal herpes infection are not generally available through any source other than the provisional notification requirement. However, between 1992 and 1996, 65 cases of neonatal infection were identified through hospital discharge data and through provisional reporting to DOH, averaging 11 cases per year for that time period. The average annual incidence rate for this period, 16.5 per 100,000 live births, compares favorably with national incidence estimates. In 2006, there were 6 neonatal herpes infections reported to DOH.

D. Reservoir

Humans

E. Modes of Transmission

Contact with HSV 1 virus in the saliva of carriers is probably the most important mode of spread. HSV type 2 is usually sexually transmitted. Both types 1 and 2 may be transmitted to various sites by oral-genital, oral-anal or anal-genital contact.

Transmission to newborns usually occurs via the infected birth canal, but less commonly occurs in utero or postpartum.

F. Incubation Period

Usually from 2 to 12 days.

G. Period of Communicability

HSV can be isolated for 2 weeks and up to 7 weeks after the appearance of primary lesions. Both primary and recurrent infection may be asymptomatic. HSV may be shed intermittently from mucosal sites for years and possibly lifelong.

H. Treatment

See CDC treatment guidelines at: http://www.cdc.gov/std/treatment

3. CASE DEFINITIONS

A. Clinical Criteria for Diagnosis

A condition characterized by visible, painful genital or anal ulcers. These are typically multiple, shallow and without induration. However, the clinical diagnosis of herpes is both insensitive and non-specific.

B. Laboratory Criteria for Diagnosis

Since the distinction between HSV serotypes influence prognosis and counseling, HSV should be confirmed by laboratory testing (virologic or type-specific serologic tests).

Virologic Tests:

1. Isolation of HSV in cell culture – the preferred virologic test in patients who present with genital ulcers or other mucocutaneous lesions; sensitivity declines rapidly as lesions begin to heal.
2. HSV antigen detection kits – do not distinguish HSV-1 from HSV-2.
3. PCR (polymerase chain reaction) assays – highly sensitive, but the role of these tests in diagnosis is not well-defined; however PCR is the test of choice for HSV in spinal fluid and central nervous system disease.
4. Cytologic detection of cellular changes of HSV is insensitive and nonspecific. Tzank test and pap smears should not be considered reliable for HSV detection.

Type-specific Serologic Tests:

1. Both type specific and nonspecific antibodies to HSV develop during the first several weeks following infection and persist indefinitely. Relatively accurate tests rely on glycoprotein G2 for HSV-2 and G1 for HSV-1 detection. Older, non-gG2 based tests remain on the market and should not be used. Therefore, the serologic type-specific IgG-based assays currently approved by the FDA should be specifically requested. These include POCkitTM HSV-2 (Diagnology); HerpSelectTM-1 ELISA immunoglobulin G (IgG) or HerpSelectTM-2 IgG (Focus Technology) and HerpSelect 1 and 2. Sensitivities for HSV-2 vary from 80% to 98% and false-negative results may occur, especially in the early stages of infection. Therefore, repeat testing or a confirmatory test (e.g., an immunoblot assay if the initial test was an ELISA) may be indicated in some settings. Likewise, false positive tests, particularly in persons with low index-value results occur. Routine screening for HSV-1 and –2 infections in the general population is not indicated, though some patients request screening for genital herpes. How to best use serological tests remains controversial.

C. Case Definition

Probable: a clinically compatible case (in which primary and secondary syphilis have been excluded by appropriate serologic tests and darkfield microscopy, when available) with either a diagnosis of genital herpes based on clinical presentation (without laboratory confirmation) or a history of one or more previous episodes of similar genital lesions.

Confirmed: a clinically compatible case that is laboratory confirmed.

4. DIAGNOSIS AND LABORATORY SERVICES

A. Diagnosis

As noted above, the clinical diagnosis of herpes is both insensitive and non-specific. The case report for Herpes Simplex is for initial genital infection. This diagnosis can be made by a clinician and cases should be reported with or without the presence of laboratory confirmation.

B. Tests Available at PHL

No HSV tests are available at the PHL.

C. Criteria for Testing at PHL

Not Applicable.

D. Specimen Collection

Not Applicable.

5. ROUTINE CASE INVESTIGATION

A. Evaluate the Diagnosis

Routine case investigations for HSV infections are not done statewide, though some jurisdictions investigate at least some cases.

B. Identify Source of Infection

Since there are no case investigations for adult genital infections, the source of infection is not identified.

C. Identify Potentially Exposed Persons

Potentially exposed persons (sexual partners) should be informed of the possible exposure by the infected individual.

D. Environmental Evaluation

Not applicable

6. CONTROLLING FURTHER SPREAD

A. Infection Control Recommendations

1. Health care setting – Standard Precautions are a set of protocols designed to reduce the risk of (or prevent) transmission of pathogens. Standard precautions synthesize the major features of Universal (Blood and Body Fluid) Precautions (designed to reduce the risk of transmission of blood borne pathogens) and Body Substance Isolation (designed to reduce the risk of transmission of pathogens from moist body substances). Under standard precautions blood, all body fluids, and all body substances of patients are considered potentially infectious (CDC, 1997).

   Neonatal Herpes Infection

   Both HSV-1 and HSV-2 can cause potentially fatal infections in infants if the mother is shedding virus, either through active lesions or through the skin, at the time of delivery. It is important that women avoid contracting herpes during pregnancy because a first episode during pregnancy causes a greater risk of transmission to the newborn. If a woman has active genital herpes at delivery, a cesarean section is usually the preferred method of delivery.

2. General

   Genital ulcer diseases can occur in both male and female genital areas that are covered or protected by a latex condom, as well as in areas that are not covered. Correct and

consistent use of latex condoms can reduce, but not eliminate the risk of genital herpes

B. Case Management

See Routine Investigation above.

C. Contact Management

See Routine Investigation above

D. Management of Other Exposed Persons

See Routine Investigation above

E. Environmental Measures

Not Applicable.

7. MANAGING SPECIAL SITUATIONS

Call the Department of Health STD Services for special situations. (360 236-3460)

8. ROUTINE PREVENTION

A. Vaccine Recommendations

There are no vaccines for herpes at present.

B. Prevention Recommendations

Key individual STD prevention messages include:

Abstinence

Abstain from sex (do not have oral, anal, or vaginal sex) until you are in a relationship with only one person, are having sex with only each other, and each of you knows the other's STD, including HIV status.

If you are sexually active:

- Use a latex condom and lubricant every time you have sex, particularly if you are not in a long term, mutually monogamous relationship.
- Get tested for asymptomatic STDs, including HIV, before beginning new relationships or at least annually if you have more than one sex partner or a non-monogamous partner.
- If you are a man who has had sex with other men, get tested at least once a year.
- If you are a man who has sex with men and have any of the following risks, test for HIV and STD every 3–6 months:
  - Use of methamphetamine or poppers
  - Diagnosis of a bacterial STD (gonorrhea, chlamydia or syphilis) in the last year
  - You are HIV-uninfected and have unprotected anal sex with partners of unknown of discordant HIV status

- If you are a woman who is planning to get pregnant or who is pregnant, get tested for syphilis and HIV as soon as possible, before you have your baby. Ask your health care provider about being tested for other STDs.
- Talk about HIV and other STDs with each partner before you have sex.
- Learn as much as you can about each partner's past behavior (sex and drug use).
- Ask your partners if they have recently been treated for an STD or have been tested for HIV; encourage those who have not been tested to do so.
- Get vaccinated against hepatitis B virus.
- If you are a woman under the age of 26, get vaccinated for human papillomavirus

Do not inject illicit drugs.

Drugs also affect your ability to make decisions, which may result in riskier sex.

If you do inject drugs, do the following:

- Use only clean needles, syringes, and other works.
- Never share needles, syringes, or other works.
- Be careful not to expose yourself to another person's blood.
- Get tested for HIV at least once a year.
- Consider getting counseling and treatment for your drug use.
- Get vaccinated against hepatitis A and B viruses.
- Do not have sex when you are taking drugs or drinking alcohol because being high can make you more likely to take risks.

Key prevention strategies include:

STD prevention counseling, testing, and referral services – Individuals at risk for STD should be offered counseling regarding methods to eliminate or reduce their risk and testing so that they can be aware of their status and take steps to protect their own health and that of their partners.

Partner Services (or Partner Notification) with strong linkages to prevention and treatment/care services – Sexual partners of STD-infected persons have been exposed to STD and are at-risk of being infected. Partner services locate these individuals based on information provided by the patient and provide counseling and education about the exposure as well as services to prevent infection or, if infected, linkages to care.

Prevention for high-risk populations – Prevention interventions for high-risk populations at high-risk or STDs, including HIV-infected persons, are critical to reducing the spread of STDs and HIV and ensure that those at highest risk of acquiring or transmitting these diseases are given the tools necessary to protect themselves and others from HIV infection. Prevention includes targeted health education and risk reduction, health communication programs, and public information programs for at-risk populations and the general public.

School-based STD Prevention – Schools have a critical role to play in promoting the health and safety of young people and helping them establish lifelong healthy behavior patterns. Washington State requires schools to teach medically accurate comprehensive sex education if such is provided by the school district.

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UPDATES